



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/768,133	01/23/2001	Ritsuko Nagao	SEL 236	3327

7590

10/01/2002

COOK, ALEX, MCFARRON, MANZO,  
CUMMINGS & MEHLER, LTD.  
Suite 2850  
200 West Adams St.  
Chicago, IL 60606

EXAMINER

PHAM, THANH V

ART UNIT

PAPER NUMBER

2823

DATE MAILED: 10/01/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	09/768,133	NAGAO ET AL.	
	Examiner	Art Unit	
	Thanh V Pham	2823	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 August 2002.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 29 August 2002 is: a) ☐ approved b) ☒ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>7</u> | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Specification*

1. The disclosure is objected to because of the following informalities: all of the "levelling" in the specification is misspelled.

Appropriate correction is required.

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Method of Fabricating Display Device Having Even Surface to Prevent the Breaking of a Wiring, to Obtain Uniform Image and to Improve the Reflectance.

3. Claims 11, 13, 15, 17, 19, 21, 23, 25, 27 and 29 are objected to because of the following informalities: it is suggested that --is-- is inserted in front of "a liquid crystal" to make the claims clear. Appropriate correction is required.

### *Drawings*

4. The corrected or substitute drawings were received on 8/12/02. These drawings are not acceptable. There are two extra pages for figures 2 and 3 and the label "leveling rate" of figures 5 and 6 are still misspelled. Figures 7 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated (*as admitted in the description of the embodiment 1*). See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid

Art Unit: 2823

abandonment of the application. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 10 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 10 recites the limitation "the second leveling film" in line 9. There is insufficient antecedent basis for this limitation in the claim. It is suggested that line 8 is changed to --baking the second layer to form a second leveling film-- to provide antecedent basis for line 10.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. *Assuming that all claims are corrected according to the above suggestion in the claims objection and 112 rejection.*

Art Unit: 2823

9. Claims 1-30 are *now* rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art in combination with Chen U.S. Patent No. 5,453,406.

The applicant's admitted prior art for the TFT formation to form a display device having pixel electrodes and an insulative layer over the pixel electrodes is similar to the invention but lacking the second leveling layer over the insulative layer (instant invention's specification page 7).

Chen reference discloses a method for producing a planar surface wherein the thickness of a first leveling film 40 (2,000-3,000 Angstroms, col. 6, lines 1-10) formed above a wiring 34 is thinner than that of a second leveling film 42 (4,000-6,000 Angstroms, col. 6, line 53-54) formed on the first leveling film. Both first and second leveling films are formed by spin coating and by the same inorganic SOG material (col. 6, line 30).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of applicant's admitted prior art and the Chen's method to enable formation of the insulative layer of the applicant's admitted prior art process using the process of Chen and furthermore to achieve increased planarity over the formed TFT (Chen, col. 2, lines 64-67).

With respect to claim 2, Chen reference discloses that the range of the second level is overlapped with the instant invention, it does not have the thickness of the first level in the range of claim 2. However, choice of thickness of the leveling layers would depend on many other factors such as the gap between the protruded elements or the height of the protruded element.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the appropriate thickness such as the thickness in the ranges as claimed into the process of Chen as the thickness would be selected in accordance with the surface planarization art as taught by Chen.

### **Conclusion**

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh V Pham whose telephone number is 703-308-2543. The examiner can normally be reached on M-F (8:30-5:00).

Art Unit: 2823

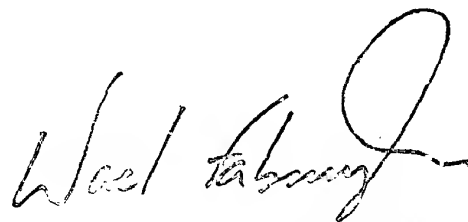
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael M. Fahmy can be reached on 703-308-4918. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 (7724, 3431 and 3432) for regular communications and 703-308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

TvP

TvP

September 27, 2002



SUPERVISORY PRIMARY EXAMINER  
TECHNOLOGY CENTER 2000